Woitach, Joseph

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Sent: Friday, January 20, 2006 3:10 PM
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Subject: sequence search request for application 10053753

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Thank you,
Joe

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anti-Cyr61 antibodies using a number of techniques that are standard in the art. *Harlow et al.*

In one embodiment, polyclonal antibodies directed against Cyr61 are generated. The generation of anti-Cyr61 antibodies specific for human Cyr61, for example, is optimized by designing appropriate antigens. The human Cyr61 protein is 381 amino acids long, including the N-terminal secretory signal. As described above, human Cyr61 exhibits a 91% amino acid sequence identity with the 379 amino acid sequence of the mouse protein. However, the mouse and human proteins diverge most significantly in the central portion of the proteins, where they are devoid of cysteines (see above). These sequence differences are exploited to elicit antibodies specific to the human Cyr61 by using as an antigen a peptide having a sequence derived from one of the divergent regions in the human protein, although antibodies directed to a conserved region are also contemplated by the invention.

In another embodiment of the present invention, monoclonal antibodies are elicited using intact recombinant human Cyr61 although a fragment may be used. Female BALB/c mice are inoculated intraperitoneally with a mixture of 0.25 ml recombinant human Cyr61 (5-50 micrograms), bacterially produced or produced in eukaryotic cells, and 0.25 ml complete Freund's adjuvant. Fourteen days later the injections are repeated with the substitution of incomplete Freund's adjuvant for complete Freund's adjuvant. After an additional two weeks, another injection of human Cyr61 in incomplete Freund's adjuvant is administered. About two weeks after the third injection, tail bleeds are performed and serum samples are screened for human anti-Cyr61 antibodies by immunoprecipitation with radiolabeled recombinant human Cyr61. About two months after the initial injection, mice whose sera yield the highest antibody titers are given booster injections of Cyr61 (5-50 micrograms in incomplete Freund's adjuvant, 0.1 ml intravenously and 0.1 ml intraperitoneally). Three days after the booster injection, the mice are sacrificed. Splenocytes are then isolated from each

purely mechanical features or process steps may also be claimed by using the Markush style of claiming. See *Ex parte Head*, 214 USPQ 551 (Bd. App. 1981); *In re Gaubert*, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975); and *In re Harnisch*, 631 F.2d 716, 206 USPQ 300 (CCPA 1980). It is improper to use the term "comprising" instead of "consisting of." *Ex parte Dotter*, 12 USPQ 382 (Bd. App. 1931).

The use of Markush claims of diminishing scope should not, in itself, be considered a sufficient basis for objection to or rejection of claims. However, if such a practice renders the claims indefinite or if it results in undue multiplicity, an appropriate rejection should be made.

Similarly, the double inclusion of an element by members of a Markush group is not, in itself, sufficient basis for objection to or rejection of claims. Rather, the facts in each case must be evaluated to determine whether or not the multiple inclusion of one or more elements in a claim renders that claim indefinite. The mere fact that a compound may be embraced by more than one member of a Markush group recited in the claim does not necessarily render the scope of the claim unclear. For example, the Markush group, "selected from the group consisting of amino, halogen, nitro, chloro and alkyl" should be acceptable even though "halogen" is generic to "chloro."

The materials set forth in the Markush group ordinarily must belong to a recognized physical or chemical class or to an art-recognized class. However, when the Markush group occurs in a claim reciting a process or a combination (not a single compound), it is sufficient if the members of the group are disclosed in the specification to possess at least one property in common which is mainly responsible for their function in the claimed relationship, and it is clear from their very nature or from the prior art that all of them possess this property. While in the past the test for Markush-type claims was applied as liberally as possible, present practice which holds that claims reciting Markush groups are not generic claims (MPEP § 803) may subject the groups to a more stringent test for propriety of the recited members. Where a Markush expression is applied only to a portion of a chemical compound, the propriety of the grouping is determined by a consideration of the compound as a whole, and does not depend on there being a community of properties in the members of the Markush expression.

When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if "wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation, then "wherein R is A, B, C or D" shall also be considered proper.

Subgenus Claim

Genus, subgenus, and Markush-type claims, if properly supported by the disclosure, are all acceptable ways for applicants to claim their inventions. They provide different ways to present claims of different scope. Examiners should therefore not reject Markush-type claims merely because there are genus claims that encompass the Markush-type claims. See also MPEP § 608.01(p) and § 715.03.

See MPEP § 803.02 for restriction practice re Markush-type claims.

II. "OR" TERMINOLOGY

Alternative expressions using "or" are acceptable, such as "wherein R is A, B, C, or D." The following phrases were each held to be acceptable and not in violation of 35 U.S.C. 112, second paragraph in *In re Gaubert*, 524 F.2d 1222, 187 USPQ 664 (CCPA 1975): "made entirely or in part of"; "at least one piece"; and "iron, steel or any other magnetic material."

III. "OPTIONALLY"

An alternative format which requires some analysis before concluding whether or not the language is indefinite involves the use of the term "optionally." In *Ex parte Cordova*, 10

USPQ2d 1949 (Bd. Pat. App. & Inter. 1989) the language "containing A, B, and optionally C" was considered acceptable alternative language because there was no ambiguity as to which alternatives are covered by the claim. A similar holding was reached with regard to the term "optionally" in *Ex parte Wu*, 10 USPQ2d 2031 (Bd. Pat. App. & Inter. 1989). In the instance where the list of potential alternatives can vary and ambiguity arises, then it is proper to make a rejection under 35 U.S.C. 112, second paragraph, and explain why there is confusion.